



SEP 30 2004

MEMORANDUM FOR: Distribution

FROM: W/OPS2 - /s/ Douglas F. Hess

SUBJECT: AWIPS X-Terminal Replacement Operational Acceptance Test
Report, August 2004

The attached report describes the results for the Operational Acceptance Test (OAT) of the Advanced Weather Interactive Processing System (AWIPS) X-Terminal Replacement. The X-Terminal Replacements will replace all legacy Hewlett-Packard (HP) X-Terminals with Linux based Personal Computers (PC) at the site AWIPS. The X-Terminal Replacement completes the Linux Workstation replacement project completed last year as part of the on-going upgrade of AWIPS to Linux based systems. The overall Linux migration project for AWIPS is intended to improve AWIPS performance during severe weather and to address AWIPS life cycle support.

There were thirteen participating sites located in five of the six NWS regions including eight Weather Forecast Offices (WFOs), two River Forecast Centers (RFCs), and three Regional Headquarters during a 6-week period, from mid-August to October 2004. Based on the successful OAT, the Test Review Group recommends deploying the XT replacement systems to all AWIPS sites.

Mary Buckingham, W/OPS24, is the OAT director. Questions or comments should be directed to Mary by e-mail at Mary.Buckingham@noaa.gov, facsimile 301-713-0912, or telephone 301-713-0326 x137.

Attachment



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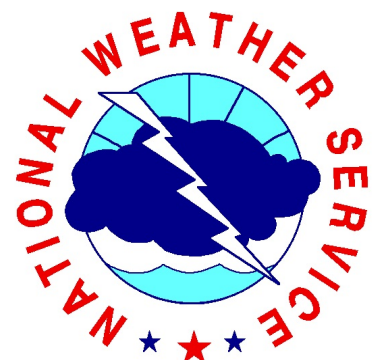
NATIONAL WEATHER SERVICE



AWIPS X-Terminal Replacement Operational Acceptance Test (OAT) Report

October 2004

**U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Weather Service/Office of Operational Systems
Field Systems Operations Center/Test and Evaluation Branch**



Operational Acceptance Test (OAT) Report for the AWIPS X-Terminal (XT) Replacement

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1. Introduction

An Operational Acceptance Test (OAT) of the AWIPS X-Terminal (XT) Replacement was conducted between August 10 and September 30, 2004. Refer to the *AWIPS X-Terminal Replacement Operational Acceptance Test Plan, August 2004* for details on how the test was conducted.

The OAT:

- a) monitored the XT replacement installation process at 13 OAT sites, including eight Weather Forecast Offices (WFOs), two River Forecast Centers (RFCs), and three Regional Headquarters
- b) evaluated and revised the installation procedures documented in the draft AWIPS System Modification Note 22 (mod note)
- c) evaluated the performance and reliability of the XT replacements in support of NWS operations; and
- d) evaluated the Network Control Facility's (NCF's) ability to monitor the XTs.

2. Recommendations

Deploy the XT replacement systems at all AWIPS sites with the recommended modifications to the AWIPS System Modification Note.

3. Purpose

The purpose for the OAT was to verify the installation process, operational performance, and reliability of the new XTs are adequate for deployment to all NWS AWIPS sites.

4. OAT Objectives and Results

The following are the objectives of the OAT and the results of testing:

- a. **Verify the XT Replacement AWIPS System Modification Note(s) allow site personnel to install the new AWIPS XTs, connect them to AWIPS, and reconfigure the systems with a minimum of disruption to the site data flow and operations.**

OAT RESULT: This objective was met.

Discussion: Prior to the start of the OAT, the co-located WFO/RFC at Taunton, MA had identified a problem with the removable tile flooring under which the cabling for the XT replacement must be installed. The problem involves a phenomenon known as "zinc whiskers." The source of the

zinc whiskers (tiny filaments of zinc) is the material that makes up the raised floor tiles in the operations and equipment areas. When the tiles are removed to lay cable, the zinc whiskers are stirred up into the air and sucked into electronic equipment, where they can cause equipment failures. Efforts to mitigate the problem by the office staff caused some delay in the laying of cable for the XT replacement. However, the zinc whiskers problem is not intrinsic to the XT replacement; it's a facilities problem. No other OAT site manifested a problems with zinc whiskers. All other significant XT installation problems can be categorized as *procedural* and were resolved with revisions to the Mod Note and to the installation files and scripts.

b. Verify the AWIPS XTs and reconfigured systems operate reliably during site operations in a 45-day demonstration at 13 sites.

OAT RESULT: This objective was met.

Discussion: The OAT sites reported a high satisfaction with the new XT systems. There have been no reported problems running the applications required to run on them including the text workstation software and the hydromet software. A few sites reported some problems in running D2D on one or two of their workstations but D2D is not required to run on the XTs. The fact that D2D runs satisfactorily on most of the XTs provides an unforeseen bonus to NWS field operations.

c. Verify the Network Control Facility (NCF) can monitor the AWIPS XTs.

OAT RESULT: This objective was met.

Discussion: There were no complaints about the XT performance, NCF maintenance, or monitoring during the OAT. There was one installation disk that needed to be replaced and was satisfactorily.

5. Conclusions

The XT replacement systems were a beneficial addition to NWS AWIPS systems and completely solved the slowness and color contention problems with the old XTs. A few minor errors and improvements were found in the mod note and were corrected. The decision to replace the old X-Terminals with stand-alone lower-end workstations provided operational benefits to the sites and additional flexibility in the system to address severe weather. The Test Review Group recommends deploying the new XT systems at all AWIPS sites.